

Two new species of *Comesperma* (Polygalaceae) from Western Australia

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Abstract

Keighery, G.J. Two new species of *Comesperma* (Polygalaceae) from Western Australia. *Nuytsia* 15(1): 53–57 (2002). Two new species of *Comesperma* Labill. from the south-west of Western Australia, *C. calcicola* Keighery and *C. griffinii* Keighery, are described and illustrated. Both species are regarded as poorly collected and in need of further survey to determine their conservation status. The great diversity of life forms found in south-western members of the genus is outlined.

Introduction

The genus *Comesperma* Labill. (Polygalaceae) is an endemic Australian genus of c. 31 species, with its centre of diversity in south-western Australia, where 17 species are currently recognized (Paczkowska & Chapman 2000) including 11 endemics. A secondary centre for the genus in Queensland has 13 species, of which six are endemic (Pedley 1984).

In northern and north-eastern Australia *Comesperma* taxa are mainly small woody shrubs (Thompson 1978). A greater variety of life forms is found in southern Australia, especially in Western Australia. In south-western Australia the shrub species are outnumbered by herbaceous or soft-wooded perennials. The shrub species include almost leafless (*C. scoparium* Steetz) and spinescent (*C. spinosum* F. Muell.) shrubs and woody climbers (*C. cilatum* Steetz, *C. integerrimum* Endl. and *C. volubile* Labill.).

The herbaceous group is diverse in the south-west of Western Australia and contains most of the endemic species, falling into three main life-form groups. The species *Comesperma acerosum* Steetz, *C. calymega* Labill., *C. confertum* Labill., *C. flavum* DC., *C. lanceolatum* (R. Br.) Benth., and *C. nudiusculum* DC. have tuberous taproots (Pate & Dixon 1982), and can escape summer drought and fire by dying back to these. Members of a second group of species (*C. drummondii* Steetz and *C. polygaloides* F. Muell.) have a spreading rootstock. They generally grow in fire-free habitats and die back in autumn before winter rains flood their habitat, but they also can form clones by rhizome spread in favourable wetland habitats. One of the new taxa (*C. calcicola*) described in this paper is part of this group of species and occupies the south-eastern margins of the south-west, where other members of the group are absent. At least one species, *C. rhadinocarpum* F. Muell., is a short-lived post-fire ephemeral with a corky rootstock. The second new species (*C. griffinii*) appears to be a post-fire ephemeral in this third group but occupies a larger range than *C. rhadinocarpum*, extending into the semi-arid zone of south-western Australia.

Taxonomy

Comesperma calcicola Keighery, *sp. nov.*

Comesperma drummondii affinis, a qua imprimis differt ramulis omino glabris, pedicellis brevis crassus.

Typus: southern margin of Truslove Nature Reserve, Western Australia, 20 October 2000, *G.J. Keighery & N.G. Gibson* 3127 (*holo*: PERTH; *iso*: CANB, K, MEL).

Soft perennial *sub-shrub* to 30 cm high, clonal from a spreading rhizome; tap root elongate and tuberous; ramets scattered over an area of several square metres. *Branchlets* erect, 1–5 per ramet, terete, glabrous, reddish green, young growth red to 10 cm, generally less. *Leaves* dense, crowded usually overlapping, grey-green, ovate, 5–9 mm long, 3–4 mm wide, thick, tapering to a petiole *c.* 1 mm long, apex acute, glabrous. *Racemes* terminal, up to 30 mm long. *Bracts and bracteoles* linear-obovate, caducous, *c.* 1 mm long, margins entire. *Pedicels* thick, 1–2 mm long. *Flowers* pinkish, glabrous. *Outer sepals* grey-green, 2-lipped, ovate, *c.* 1.5 mm long, apex obtuse, anterior ones connate nearly to apex. *Inner sepals* pinkish, obovate, *c.* 3 mm long. *Keel petal* enclosing the posterior petals. *Capsule* orbicular, narrowed at base, 5–6 mm long, 2–3 mm wide, apex acute. *Seeds* narrowly ovoid, *c.* 2 mm long, *c.* 1 mm wide, with long hairs filling lower part of capsule. (Figure 1A,B)

Other specimens examined. WESTERN AUSTRALIA: 21 km NNW of Mt Ragged, 33°17'S, 123°24'E, 17 Jan. 1989, *B. [W.R.] Archer s.n.* (PERTH); 0.5 km SE of Kau Rock, 65 km NE of Esperance, 13 Jan. 1990, *W.R. Archer* 1301901 (PERTH); 4 km S of Forrestiana crossroads towards Hatters Hill, 32°27'S, 119°45'E, 18 Oct. 1995, *B.J. Lepschi* 2185 (PERTH).

Distribution. Occurs between Mt Ragged, Truslove and Forrestiana in the Mallee Bioregion of south Western Australia.

Habitat. Grows in calcareous or semi-saline clay loams in Open Mallee or Chenopod shrublands.

Flowering time. Recorded in flower between October and January.

Conservation status. Conservation Codes for Western Australian Flora: Priority Three. This species is known from Truslove Nature reserve and uncleared unallocated crown lands. It has only been collected a few times and hence is in need of further survey to determine its conservation status.

Etymology. The epithet refers to the calcareous soils that this species prefers.

Affinities. This species is related to *Comesperma drummondii*, a species of clay-based wetlands of the Swan Coastal Plain, Jarrah Forest, Coolgardie and Avon-Wheatbelt Bioregions. This species differs in having leaves that are minutely pubescent and well displayed pink flowers in an almost corymbose raceme with long pedicels.

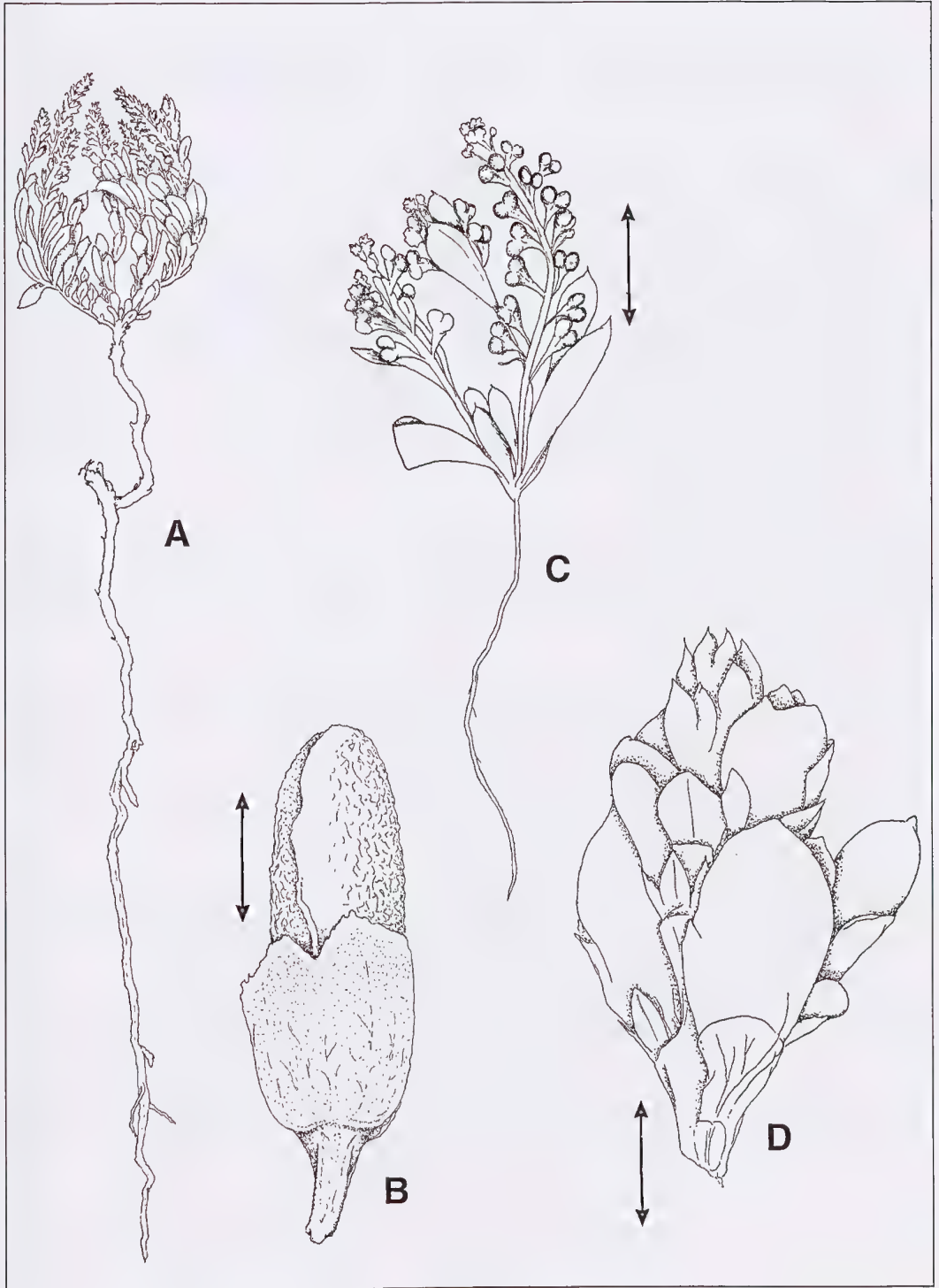


Figure 1. A,B – *Comesperma calcicola*, from NNW of Mt Ragged. A – whole plant (scale bar = 1 cm), B – flower (scale bar = 1 mm); C,D – *Comesperma griffinii*, from Indarra Nature Reserve. C – whole plant (scale bar = 1 cm), D – inflorescence (scale bar = 1 mm). Drawn by Nadine Guthrie from PERTH specimens W.R. Archer s.n. (A,B) and G.J. Keighery s.n. (C,D).

Comesperma griffinii Keighery, *sp. nov.*

Herbae annuae vel perennes erectae radice palari. Ramulus glabrus, sessilifolius, lamina attenuatus versus basis, rostulata. Flores albus, parvus.

Typus: Indarra Nature Reserve, on Ardingly South Rd, 20 km south-west of Mullewa, Western Australia, 25 October 1988, G.J. Keighery *s.n.* (*holo:* PERTH).

Herb perennial or possibly annual, 5–15 cm tall, with a slender taproot. *Branchlets*, terete, glabrous, reddish green, young growth red. *Leaves* clustered at base forming an apparent rosette, scattered above, sessile but narrowed at base, narrowly oblong-ovate, flat, 12–20 mm long, c. 6 mm wide, apex a short recurved mucrone, margin entire, glabrous. *Raceme* erect, 12–18 mm long. *Flowers* white, small, glabrous. *Bracts and bracteoles* narrowly obovate, small and membranous, caducous, apex acute. *Outer sepals* free, membranous, obovate, c. 1 mm long, apex acute. *Inner sepals* white, obovate, c. 2 mm long. *Keel petal* white, c. 2 mm long, enclosing posterior petals. *Capsule* orbicular with narrowed base, 3–4 mm long, c. 2 mm wide, apex acute. *Seeds* narrowly ovoid, c. 1 x 1 mm, with long hairs filling lower part of capsule. (Figure 1C,D)

Other specimens examined. WESTERN AUSTRALIA: Allied Eneabba Leases, 15 km S of Eneabba, 29°56'S, 115°16'E, 30 Oct. 1978, E.A. Griffin 1405 (PERTH); Petrudor Rock Reserve, SE of Dallwallinu, 7 Nov. 1999, M. Hislop 1883 (PERTH); 60 km NE of Wubin, 1.5 km E of Great Northern Highway on road to Mt Gibson Station, 24 Oct. 1992, A.M. Lyne 864, L. Craven & F. Zich (AD, CANB, MEL, PERTH).

Distribution. Scattered occurrences from Eneabba north to near Mullewa inland to Mount Gibson Station and south to near Dalwallinu.

Habitat. Grows in yellow or grey sand in heath or shrublands.

Flowering and fruiting time. Recorded in flower and early fruit in October.

Conservation status. Conservation Codes for Western Australian Flora: Priority Two. An uncommon species, but probably overlooked because of its small size and inconspicuous flowers.

Etymology. The epithet honours botanist E.A. (Ted) Griffin whose numerous collections, ecological studies and publications have greatly added to our knowledge of the flora of the northern sandplains.

Affinities. This species is not closely related to any other *Comesperma* species, although its habit is suggestive of a relationship to *C. rhadinocarpum* and perhaps more distantly to *C. drummondii*. However, it differs markedly from both species in having small white flowers and a very compact habit.

Acknowledgements

Observations on live material and collections of *Comesperma calcicola* were made during biological surveys undertaken as part of the Salinity Action Plan. Nadine Guthrie drew the illustrations.

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